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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,975	09/26/2003	Robin Alexis Takasugi	10014268-1	3620

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EXAMINER

TSAI, SHENG JEN

ART UNIT	PAPER NUMBER
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2186

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

10/672,975

Applicant(s)

TAKASUGI ET AL.

Examiner

Sheng-Jen Tsai

Art Unit

2186

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 05 October 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed ^{Remark} ~~amendment~~ (s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: 1-30.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see below.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____.
13. ☐ Other: _____.

(1) Applicants contend that they could not find disclosure in figures 1D or 1F of Hicken that teaches or suggests adding a prefetch value to a transfer length value specified in a current read command, and then provided this sum to a data storage device. The Examiner disagrees with this assessment for the following reasons.

First, figure 1D shows an example of a cache entry, which is created each time a stream of data is read from the storage device [figure 1A, 40], stored at the cache buffer [figure 1A, 10] and to be sent to the host [figure 1A, 50] later, comprising both the requested data, represented by the LBA (Logical Block Address) and the associated Block Count, and the prefetched data, represented by PF LBA and End PF LBA. This indicates that prefetched data is read in addition to the requested data during a cache transaction that reads data from the storage device and stored at the cache buffer.

Second, figure 1F explicitly illustrates that prefetched data [figure 1D, 154] is read in addition to the requested data [figure 1D, 152] during a cache transaction that reads data from the storage device and stored at the cache buffer.

Third, Figure 1E explicitly illustrates that the cache buffer contains the prefetched data and the requested data [figure 1E, 154 and 152].

Fourth, figure 1C, step 126 depicts an action of "compute prefetch," followed by step 132, which depicts an action of "set buffer counter and start the disk." Thus, it is clear that a prefetch value is computed first, is used as an input for setting the buffer counter, and then starts the disk (the storage device) to read data into the buffer. Column 3, lines 6-12 of Hicken also confirms the order of this sequence of events as computing a prefetch for the command, followed by setting the buffer counter, and then starting a read of the disk.

Fifth, figure 3E step 430 depicts an event of "compute prefetch," followed by step 432, which "checks if the request LBA plus block count plus prefetch is greater than end of prefetch area." This provides further evidence that the total transfer length includes both the length of the requested data and the length of the prefetched data.

Thus, figures 1C illustrates that a fetch value is computed, is used as an input for setting the buffer counter, and then starts the disk (the storage device) to read data into the buffer; and figures 1D, 1E and 1F further illustrate that indeed the prefetched data is read from the storage device in addition to the requested data. Therefore Hicken indeed teaches the limitation of "the first transfer length value is determined by adding a prefetch value to a transfer value specified in the current host command."

(2) Applicants also raise the issue that the prefetched data in Hicken is read from the storage device separately from the requested data.

It is noted that this issue has been fully addressed in the Office action mailed on 08/09/2006.

It is noted again that figure 1C, step 126 depicts an action of "compute prefetch," followed by step 132, which depicts an action of "set buffer counter and start the disk." Thus, it is clear that a prefetch value is computed first, is used as an input for setting the buffer counter, and then starts the disk (the storage device) to read data into the buffer.

It should be further noted that Claim 1, as currently presented, does not recite any limitation regarding whether the reading of prefetched data and the reading of the requested data are to be performed concurrently or separately. Thus this issue that the prefetched data in Hicken is read from the storage device separately from the requested data is completely irrelevant to Claim 1.

(3) Applicants contend that Hicken does not teach the first and second registers or the multiplexer as recited in Claim 9.

The Examiner indicated in the previous Office Action that the corresponding first and second registers are the minimum and maximum prefetch values, but the Applicants argue that these are values, and not registers.

It should be noted that the minimum and maximum prefetch values are stored using the CH_ENV_ADC_MINPF and CH_ENV_ADC_MAXPF registers as shown in TABLE 1 [column 7, lines 46-47].

As for the function of multiplexing, figure 16A, step 1128 illustrates an example of caching only required data from disk without prefetch while step 1136 depicts an example of caching prefetched data. Thus the decision and selection of zero prefetch length and non-zero prefetch length are part of the scheme of Hicken's invention.

Therefore, the Examiner's position regarding the status of all claims remains the same as stated in the previous Office Action.



PIERRE BATAILLE
PRIMARY EXAMINER

10/12/06